a memory for storing safety-relevant data of the stored-program control, the safety-relevant data being accessible by the controller.

8. (Three times Amended) A safety device for a stored-program control, comprising:

a controller for exchanging data with the stored-program control, the stored-program control continually executing an SPS program on a real-time operating system, the stored-program control exchanging data, via a bus system, with a peripheral to be controlled; and

a monitor for monitoring a wake-up signal generated by the stored-program control and transmitted to the monitor by the controller.

13. (Three times Amended) A safety device for a stored-program control, comprising:

a controller for exchanging data with the stored-program control, the stored-program control continually executing an SPS program on a real-time operating system, the stored-program control exchanging data, via a bus system, with a peripheral to be controlled; and

an interface for receiving at least one control signal forwarded to the stored-program control via the controller.

Remarks

Claims 1-14 are currently pending, with claims 1, 8, and 13 having been amended hereby.

Claims 1, 2, 4-8 and 10-14 were rejected under 35 USC 103(a) as being unpatentable over Poisner (U.S. Patent No. 6,012,154, hereinafter Poisner) in view of Kadnier, Windows NT 4: The Complete Reference (hereinafter Kadnier).

Amended independent claims 1, 8, and 13 recite a safety device for a stored-program control that includes, *inter alia*, a controller for exchanging data with the stored-program control, the stored-program control continually executing an SPS program on a real-time operating system, the stored-program control exchanging data, via a bus system, with a peripheral to be controlled. For at least the reasons discussed below, it is respectfully submitted that Poisner and Kadnier do not disclose this feature of independent claims 1, 8 and 13.

Poisner relates to a system and method for invoking an interrupt handler based on a timer in case of a malfunction within the normally-functioning operating system running on a computer. In the Office Action, the software agent of Poisner is equated with the claimed stored-program control that executes the SPS program.

However, neither the software agent nor the interrupt handler disclosed in Poisner **exchanges data with a peripheral to be controlled**. While Figure 2 of Poisner refers to peripheral devices located across an expansion bus bridge such as a display device and an input device, there is no mention of the software agent or interrupt handler exchanging data with these devices. In particular, there is no indication that the software agent or the interrupt handler can retrieve or transmit data to the peripheral devices during an operating system malfunction.

This is in contrast to the teachings of the present invention which explains how a stored-program control exchanges data with peripheral devices:

> ***This SPS program 49 processes the output signals of peripheral 32 using data modules.*** The respective control signals for peripheral 32 are generated depending on the input quantities for SPS program 49. *Data is exchanged between the stored-program control, formed by SPS program 49 and real time operating system 47, and the peripheral 32 via computer bus system 12, plug-in card 30 and bus system 20, to which peripheral 32 is connected. A display window 45 is provided to display relevant states and data of peripheral 32. (Specification, page 4, lines 22-28; emphasis added).*

Since the stored-program control executes a program that is independent of the operating system, information can be exchanged with peripheral devices even when the operation system suffers a malfunction.

The secondary Kadnier reference fails to cure the deficiencies of the primary Poisner reference since Kadnier does not disclose or suggest a stored-program control that continually executes an SPS program on a real-time operating system and that exchanges data, via a bus system, with a peripheral to be controlled.

Accordingly, it is submitted that independent claims 1, 8, and 13, as well as their dependent claims 2, 4-7, 10-12, and 14, are patentable over the applied references.

Claims 3 and 9 were rejected under 35 USC 103(a) as being unpatentable over Poisner.

This rejection is not understood since claims 3 and 9 depend from, and further limit, independent claims 1 and 8, respectively. As the Office Action acknowledges, Poisner does not disclose or suggest each of the features of the independent claims, and therefore cannot disclose or suggest each of the features of dependent claims 3 and 9. It is therefore respectfully submitted that claims 3 and 9 are patentable over Poisner. Even if Poisner was combined with Kadnier, this combination would still fail

to render obvious claims 3 and 9, since Kadnier fails to cure the deficiencies of Poisner as applied against parent claims 1 and 8.

In light of the above discussion, Applicants respectfully submit that the present application is in all aspects in allowable condition, and earnestly solicit favorable reconsideration and early issuance of a Notice of Allowance.

The Examiner is invited to contact the undersigned to discuss any matter concerning this application. The Office is authorized to charge any fees under 37 C.F.R. 1.16 or 1.17 related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

Dated: July 14, 2003

By: (by Reg. No. 36,197)

Richard L. Mayer (Reg. No. 22,490)
KENYON & KENYON
Tel: (212) 425-7200
CUSTOMER NO. 26646

PATENT & TRADEMARK OFFICE

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

Claims 1, 8 and 13 have been amended as follows:

1. (Three times Amended) A safety device for a stored-program control, comprising:

a controller for exchanging data with the stored-program control, the stored-program control continually executing an SPS program on a real-time operating system, the [controller] stored-program control exchanging data, via a bus system, with a peripheral to be controlled; and

a memory for storing safety-relevant data of the stored-program control, the safety-relevant data being accessible by the controller.

8. (Three times Amended) A safety device for a stored-program control, comprising:

a controller for exchanging data with the stored-program control, the stored-program control continually executing an SPS program on a real-time operating system, the [controller] stored-program control exchanging data, via a bus system, with a peripheral to be controlled; and

a monitor for monitoring a wake-up signal generated by the stored-program control and transmitted to the monitor by the controller.

13. (Three times Amended) A safety device for a stored-program control, comprising:

a controller for exchanging data with the stored-program control, the stored-program control continually executing an SPS program on a real-time operating system, the [controller] stored-program control exchanging data, via a bus system, with a peripheral to be controlled; and

an interface for receiving at least one control signal forwarded to the stored-program control via the controller.